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2005 Conservation Security Program (CSP) Record Keeping Workbook

Nevada Supplement 2

Cropland and Hayland

Applicant Name: _____

Cropland and Hayland

Crop Rotation and Management

This worksheet will provide information regarding your crop varieties as well as the rotation they are grown on your operations. Please fill out this form if you have cropland or hayland that has a rotational sequence. Use the example below to fill out your information on the following page.

EXAMPLE: Crop Rotation and Management Worksheet

Tract Numbers	*Field Numbers or Names*	*Typical Rotation Sequences*									
		Yr 1	*Yr 2*	*Yr 3*	*Yr 4*	*Yr 5*	*Yr 6*	*Yr 7*	*Yr 8*	*Yr 9*	*Yr 10*
486	3 & 4	Perennial/Rye Grass Seed				Crimson Clover	Winter Wheat				
695	5, 6, & 7	Alfalfa			Potatoes	Winter Wheat	Potatoes	Corn			
1311	1, 2, & 8	Winter Wheat	Spring Barley	Summer Fallow							

Additional Comments or Observations:

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WORKSHEET: Crop Rotation and Management

Tract Number	*Field Numbers or Names*	*Typical Rotation Sequences*									
		Yr 1	*Yr 2*	*Yr 3*	*Yr 4*	*Yr 5*	*Yr 6*	*Yr 7*	*Yr 8*	*Yr 9*	*Yr 10*

Additional Comments or Observations:

Crop and Residue Management

This worksheet will provide information regarding the crop residue left on your fields as well as how it is removed. If crop/alfalfa aftermath is grazed, also fill out the Forage and Animal Balance Worksheet Table B (page C&H-15) and Livestock Access to Water Courses Worksheet (page C&H-17) .

Please refer to the example below for your reference and then fill out your information on the following page. Use the Residue Estimate Table at right when completing the *Estimated Pounds of Residue* column.

Example: A 60 bushel per acre crop of winter wheat produces 6,480 pounds of residue per acre.

Note: The specific amount of residue produced by a crop depends on several factors. These include timing and amount of precipitation, temperatures, stored soil water, soil depth, crop variety and pests.

Residue Estimate Table

Crop	*Pounds of Residue per Unit of Yield*
Spring Wheat	78 pounds/bushel
Winter Wheat	108 pounds/bushel
Durum	80 pounds/bushel
Rye	75 pounds/bushel
Barley	72 pounds/bushel
Oats	60 pounds/bushel
Flax	90 pounds/bushel
Millet	80 pounds/bushel
Triticale	90 pounds/bushel
Sorghum	1.0 pounds/pound
Corn (grain)	1.0 pounds/pound
Lentils	1.1 pounds/pound
Safflower	1.5 pounds/pound
Sunflower	2.0 pounds/pound
Mustard	1.5 pounds/pound
Buckwheat	1.5 pounds/pound
Beans	1.0 pounds/pound
Peas	0.9 pounds/pound
Potatoes	125 pounds/ton
Sugar Beets	140 pounds/ton
Fall Canola	2.5 pounds/pound
Spring Canola	1.6 pounds/pound

EXAMPLE: Crop and Residue Management Worksheet

Crop Grown and Year	*Average Yield per Acre*	*Estimated Pounds of Residue/Acre or Stubble Height in inches after Grazing*	*Is Residue Removed?*	*Removal Method*
Winter Wheat 2001	100 bushels (irrigated) 60 bushels (nonirrigated)	17,280	Y	swath & bale
Barley 2001	50 bushels	3,600	N	
Corn 2001	7,800 pounds	7,800	N	
Alfalfa 2001	4 tons	750	Y	grazed
Barley 2002	60 bushels	4,320	N	
Corn 2002	5,000 pounds	5,000	N	
Potatoes 2002	6 tons	750	N	
Fall Canola 2002	60 pounds	150	N	

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WORKSHEET: Crop and Residue Management

Crop Grown and Year	*Average Yield per Acre*	*Estimated Pounds of Residue/Acre or Stubble Height in inches after Grazing*	*Is Residue Removed?*	*Removal Method*

Additional Comments/Observations:

Cultivation and Field Operations

The *Cultivation and Field Operation Worksheet* provides information on your typical tillage operations, pest control, residue management, harvest, and irrigation water application. Fill out a worksheet for each crop in your rotation. On pages C&H-8 and C&H-9, you will find a list of typical tillage operations to assist in the completion of the *Typical Operations for Crop* column. Refer to the example below for reference and then fill out your information on the following page.

EXAMPLE: Cultivation and Field Operations Worksheet

Tract(s)	1778	*Field(s)*	1, 2, 3, 16, 20	
Crop Planted and Yield	Potato 530 cwt., Winter Wheat 130 bu/acre	*Previous Crop and Yield*	Alfalfa Hay 7 tons/acre	
Include information on operations such as tillage, spray, irrigation, grazing, harvest, pest control, etc.				
Date of Operation(s)	*Typical Operation(s) for Crop*	*Comments on Operation(s)*	*Monthly Irrigation Dates*	*Irrigation Application (inches/acre)**
10/16	Heavy Offset Disk	12 inches deep		
10/20	Sub Soiler	30 inch spacing, 24 inch depth		
2/15	Tandem Disk		2/15-3/15	2 in/ac
3/15	Bedder, Disk Hiller			
4/1	Planter 30 inch Rows		4/1-5/1	3 in/ac
5/1	Cultivator, Disk Hiller on Beds		5/1-6/1	4 in/ac
5/10	Dammer Diker			
5/15	Insecticide Spray - Aerial			
6/1	Herbicide Spray - Aerial		6/1-7/1	6 in/ac
6/15	Insecticide Spray - Aerial			
7/1	Herbicide Spray - Aerial		7/1-8/1	8 in/ac
10/15	Harvest, Dig Potatoes		10/15-11/1	2 in/ac
10/18	Heavy Offset Disk + Harrow			
10/20	Surface Broadcast Fertilizer + harrow + cultipacker			
10/25	Double Disk Drill			
12/1	Herbicide Application - ground			
3/1	Herbicide Application - ground		3/1-5/1	5 in/ac
8/1	Harvest Wheat		3/1-5/1	12 in/ac

** examples for calculating irrigation in/ac are on page C&H-8*

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WORKSHEET: Cultivation and Field Operations

Tract(s)		*Field(s)*		
Crop Planted and Yield		*Previous Crop and Yield*		
Include information on operations such as tillage, spray, irrigation, grazing, harvest, pest control, etc.				
Date of Operation(s)	*Typical Operation(s) for Crop*	*Comments on Operation(s)*	*Monthly Irrigation Dates*	*Irrigation Application (inches/acre)**

EXAMPLES FOR CALCULATING IRRIGATION APPLICATION

SURFACE IRRIGATION

Flow is measured in cubic feet per second (cfs)
1 cfs of water flowing for 1 hour will cover 1 acre to a depth of 1 inch, or
Gross Irrigation Depth = QT/A
where Q is the irrigation flow rate in cfs, T is the irrigation set time in hours, and A is the field size in acres

EXAMPLE:
A flow of 8 cfs was used to irrigate a field that is 40 acres in size.
The water was on for 20 hours to make the irrigation.

Gross Depth Applied =

$$\frac{8 \text{ cfs} \times 20 \text{ hrs}}{40 \text{ acres}} = \frac{160 \text{ cfs-hrs}}{40 \text{ acres}} = 4 \text{ inches or } 4 \text{ Ac-Inch/Acre}$$

SPRINKLER IRRIGATION

Flow is measured in gallons per minute (gpm). 1 cfs = 448.8 gpm

EXAMPLE:
Assume that a flow of 1000 gpm is applied by a center pivot system that covers 125 acres. It took 60 hours to make 1 revolution of the pivot.

Gross Depth Applied =

$$\frac{(1000\text{gpm}/448.8) \times 60 \text{ hrs}}{125 \text{ acres}} = \frac{133.7 \text{ cfs-hrs}}{125 \text{ acres}} = 1.07 \text{ inches or } 1.07 \text{ Ac-Inch/Acre}$$

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Typical Field Operations

Aerator, field surface, ground driven
Aerial seeding
Bale straw or residue
Bed shaper
Bed shaper, 12 inch
Bedder, hipper, disk hiller
Bedder, hipper, hiller 12 inches high
Bedder, hipper, hiller 15 inches high
Bedder, hipper, hiller 18 inches high
Burn residue
Chisel, st. pt.
Chisel, st. pt. 12 inches deep
Chisel, st. pt. 15 inches deep
Chisel, sweep shovel
Chisel, twisted shovel
Cultipacker, roller
Cultivator, field 6 to 12 inch sweeps
Cultivator, field with spike points
Cultivator, hipper, disk hiller on beds
Cultivator, off bar with disk hillers on beds
Cultivator, row - 1st pass ridge till
Cultivator, row - 2nd pass ridge till
Cultivator, row 1 inch ridge
Cultivator, row 3 inch ridge
Cultivator, row, high residue
Disk, offset, heavy
Disk, offset, heavy 12 inch depth
Disk, offset, heavy 15 inch depth
Disk, tandem heavy primary op.
Disk, tandem light finishing
Disk, tandem secondary op.
Drill or air seeder single disk openers 7-10 inch space.
Drill or air seeder, hoe opener in heavy residue
Drill or air seeder, hoe/chisel openers 6-12 inch space.

Drill or air seeder, double disk
Drill or air seeder, double disk opener, with fertilizer openers
Drill or air seeder, double disk, with fluted coulters
Drill or air seeder, offset double disk openers
Drill, air seeder, sweep or band opener
Drill, deep furrow 12 to 18 inch spacing
Drill, heavy, direct seed, double disk opener
Drill, heavy, direct seed, double disk opener with row cleaners
Drill, semi-deep furrow 12 to 18 inch spacing
Fertilizer application. anhyd knife 12 inch
Fertilizer application. deep placement heavy shank
Fertilizer application. surface broadcast
Fertilizer application, anhyd knife 30 inch
Fertilizer application, strip-till 30 inch
Furrow diker
Furrow shaper, torpedo
Graze, continuous
Graze, intensive rotational
Graze, rotational
Graze, stubble or residue
Harrow, coiled tine
Harrow, heavy
Harrow, rotary
Harrow, spike tooth
Harrow, tine, on beds
Harvest, grass or legume seed, leave forage
Harvest, grass seed, remove forage
Harvest, hay, grass
Harvest, hay, legume
Harvest, hay, no regrowth
Harvest, small grains, corn, peas, canola, mustard
Harvest, legume seed, remove forage
Harvest, root crops, digger

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Typical Field Operations (continued)

Harvest, silage
Harvest, snapper header
Harvest, stripper header
Knife, windrow dry beans
Land plane
Lister, 40 inch
Manure injector
Manure spreader
Mower, swather, windrower
Mulch treader
Para-plow or para-till
Permeable weed barrier applicator
Planter, double disk opener
Planter, double disk opener w/fluted coulter
Planter, double disk opener, 18 inch rows
Planter, in-row subsoiler
Planter, small veg seed
Planter, strip till
Planter, transplanter, vegetable
Planter, transplanter, vegetable, no-till
Planting, broadcast seeder
Plastic mulch applicator 100 percent cover
Plastic mulch applicator 40 percent cover
Plastic mulch applicator 75 percent cover
Plastic mulch, 05 percent removal
Plastic mulch, 10 percent removal
Plastic mulch, 25 percent removal
Plastic mulch, 50 percent removal
Plastic mulch, remove
Plow, disk
Plow, moldboard
Plow, moldboard, conservation
Plow, moldboard, up hill
Plow, reversible

Pruning
Rodweeder
Roller, corrugated packer
Roller, on beds
Roller, residue
Roller, smooth
Rotary hoe
Rototiller, field
Rototiller, field, add residue
Rototiller, row cult add residue
Rototiller, row cultivator
Seedbed finisher
Shredder, flail or rotary
Shredder, rotary, regrow veg
Shredder, rotary, remove residue
Sprayer, kill weeds, volunteer for reduced/no till
Sprayer, post emergence
Striptiller w/middlebuster on beds
Subsoiler
Subsoiler bedder (ripper/hipper)
Subsoiler ripper, 24 to 40 inches deep
Sweep plow 20 to 40 inches wide
Sweep plow wider than 40 inches with mulch treader
Sweep plow, wider than 40 inches
Water mulch; off
Water mulch; on

Crop Fertilizer Input

This worksheet contains information on the nutrient applications on your operation. In the *Soil Test* column, please indicate if your fertilizer application rate is based on soil test results. Please attach a copy of the latest soil test for each field.

If you apply animal manure, indicate if your application rate is based on soil test results. Also indicate if manure tests were used to determine application rate.

Please refer to the example below for reference and then fill out your information on the following page.

EXAMPLE: Crop Fertilizer Input Worksheet

Crop Grown	*Field Number*	*Fertilizer Formulation*	*Application Rate lbs/ac*	*Application Method and Date*	*Application Depth*	*Soil Test*	*Manure Test*
Perennial Rye Grass Seed	3 & 4	16-20-0	100 lbs/acre	Banded at fall planting	2 inches	Yes	N/A
Perennial Rye Grass	3 & 4	45-0-0	300 lbs/acre	Broadcast in Feb. &	Surface	No	N/A
Crimson Clover	3 & 4	None	----	----	----	----	----
Winter Wheat	3 & 4	16-20-0	100 lbs/acre	Banded at seeding in fall	2 inches	No	N/A
Winter Wheat	3 & 4	45-0-0	350 lbs/acre	Broadcast	----	No	N/A
Corn	5, 6, & 7	Feedlot Manure	10 tons/acre	Broadcast April	Disk to 4 inch depth	No	Yes
Alfalfa	5, 6, & 7	0-0-50-18	200 lbs/acre	Broadcast at seeding	Disk in	No	N/A
Potato	5, 6, & 7	20-10-10	500 lbs/acre	Banded at Planting	4 inches	Yes	N/A
Potato	5, 6, & 7	46-0-0	200 lbs/acre	Broadcast	Irrigated in	No	N/A

If irrigated, has water been tested for nitrates? Yes _____ No _____

If you have the results from this test, please attach them to this page for your planner's reference.

Additional Comments/Observations:

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WORKSHEET: Crop Fertilizer Input

Crop Grown	*Field Number*	*Fertilizer Formulation*	*Application Rate lbs/ac*	*Application Method and Date*	*Application Depth*	*Soil Test*	*Manure Test*

If irrigated, has water been tested for nitrates? Yes _____ No _____

If you have the results from this test, please attach them to this page for your planner's reference.

Additional Comments/Observations:

Pest Management Input

This worksheet includes information on the methods used to control pests and weeds on your operation. The following list includes additional information to assist in completing this worksheet.

- Under the *Suppression Method* column, please include the product name or the active ingredient of the method used to manage the target pest listed.
- Under the *Pesticide Application Rate* column, include the pounds or ounces of the active ingredient (ai).
- In the *Broadcast or Banded* column, indicate if the pesticide was broadcast applied (more than 50 percent of field) or banded (less than 50 percent of field). If these options do not apply, indicate "N/A" (not applicable).
- In the *Surface, Soil Incorporated or Foliar Applied* column, indicate if the pesticide was surface applied (applied to soil surface), soil incorporated (mixed into the soil with light tillage or irrigation), or foliar applied (sprayed on a nearly full crop/weed canopy and/or on a more than 50 percent residue cover). If none of these practices apply, indicate "N/A".
- Under the *Application Metho*d column, indicate if fertilizer was ground or aerial applied.

Please refer to the example below for reference and then fill out your information on the following page.

EXAMPLE: Pest Management Input Worksheet

Crop Grown	*Field Number*	*Target Pest*	*Suppression Method*	*Pesticide Application Rate*	*Date Applied*	*Broadcast or Banded*	*Surface, Soil Incorp., or Foliar Applied*
Winter Wheat		Downy Brome	Metribuzin	.3 lbs of ai	10/1	Broadcast	Surface
Spring Barley		Broadleaf Weeds	2, 4-D	.75 lbs of ai	Late May	Broadcast	Foliar
Corn		Weeds	Row cultiva-tion 2x	----	5/1 to 5/20	----	----
Alfalfa		Clover Leaf Weevil	Malathion	1.0 lbs of ai	When needed	Broadcast	Foliar
Potatoes		Wireworm	Phorate	3.02 lbs ai per 1,000 feet if row	At planting	Banded	Soil Incorporated

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WORKSHEET: Pest Management Input

Crop Grown	*Field Number*	*Target Pest*	*Suppression Method*	*Pesticide Application Rate*	*Date Applied*	*Broadcast or Banded*	*Surface, Soil Incorp., or Foliar Applied*

Additional Comments/Observations:

Forage and Animal Balance Worksheet (Table B)

Table B (complete this table only if you graze crop/alfalfa aftermath)

Table B provides the "balancing act" of forage allocation to meet domestic and wildlife needs, and can be used to assist in your grazing management design. Use the information identified in Table A to assist in completing Table B.

EXAMPLE - TABLE B: Grazing and Harvested Roughage Available

Type of Forage or Feed	*Field Number/Name*	*Acres*	*Yield/Acre per Year*	*Total AUMs Available*
Rangeland	1, 2, 3, 4	10,720	.25 AUM/acre	= 2,680 AUMs per year
Irrigated Pasture	5, 6	1,000	2.5 acres/AUM	= 400 AUMs per year
Dryland Pasture	7, 8	950	3.8 acres/AUM	= 250 AUMs per year
Hayland Grazing				
Crop/Alfalfa Aftermath				
Leased Grazing				
Other Forage				
Hay Source Number 1	purchase	---	12 tons	26 AUMs per year
Hay Source Number 2	produced on farm	100	2 tons/acre	437 AUMs per year
Silage				
Other Roughage				
Total		12,770 acres		3,793 AUMs available

Sample Calculations for Table B:

To convert AUM/ac to Total AUMs: Multiply Acres by AUM/ac. 10,720 x .25 = 2,680
To convert ac/AUM to Total AUMs: Divide Acres by ac/AUM. 1000 / 2.5 = 400
To convert tons of hay purchased to Total AUMs: (Tons x 2000) / 915 lbs per AUM
(12 x 2000) / 915 = 26

NOTE:
If you do not estimate annual production on your grazing lands (by clipping and weighing, or through visual estimates), you can estimate the AUM values "backwards" by using your historical stocking rates. For example, if you typically run 200 cow/calf pairs in Field 1 (2,800 acres) for 3 months, the Yield/Acre per year for that field may be calculated this way:

1. From Table A, 200 cow/calf pairs (1,000 lb cows) = 200 Animal Units (200 x 1.00)
2. 200 AUs on Field 1 for 3 months = 600 AUMs (200 x 3)
3. 600 AUMs / 2,800 acres = 0.21 AUM/ac. The Total AUMs Available for that field are the total Animal Units x length of grazing period in the field (200 AU x 3 months) = 600 AUMs.

Forage and Animal Balance Worksheet (Table B)

TABLE B: Grazing and Harvested Roughage Available

Type of Forage or Feed	*Field Number/Name*	*Acres*	*Yield/Acre per Year*	*Total AUMs Available*
Rangeland				
Irrigated Pasture				
Dryland Pasture				
Hayland Grazing				
Crop/Alfalfa				
Leased Grazing				
Other Forage				
Hay Source Number 1				
Hay Source Number 2				
Silage				
Other Roughage				
Total				

Livestock Access to Water Courses Worksheet

(complete this table only if you graze crop/alfalfa aftermath)

Managing livestock access to water courses. Check the answer that best describes your livestock management. This form is required for range, pasture, and crop aftermath grazing. If you answer "False" or "N/A" to any of these questions, please provide a brief description explaining why.

Question	*True*	*False*	*N/A*
1. I do not allow continuous livestock grazing in riparian areas or other water courses.			
2. I regularly herd livestock away from water courses to decrease their time and concentration in those areas.			
3. I provide off-stream drinking water sources for livestock.			
4. I provide supplements or other attractants outside of water courses and away from ponds to keep livestock from concentrating in those areas.			
5. I have fenced some or all of my riparian areas and ponds to deter livestock and prevent them from loitering in those areas.			
6. My corrals, handling facilities and/or feeding areas are not located in or directly adjacent to streams or creeks.			

If you answered "False" or "N/A" to the above questions, please explain: